

## Methane-powered Vehicles

In the continuing quest for energy alternatives to expensive oil, liquid methane is beginning to make inroads as a power source for automotive vehicles. The principal component of natural gas, methane costs less than half as much as gasoline, according to a study by the American Gas Association, and its emissions are considerably cleaner than those from gasoline or diesel engines. In a development based on aerospace technology, Beech Aircraft Corporation's Boulder (Colorado) Division has designed and is now producing a system for converting cars and trucks to liquid methane operation.

The accompanying photos show the company's methane-powered demonstration car and, in the trunk, an 18-gallon fuel tank. Liquid methane (LM) is a "cryogenic" fuel which must be stored at a temperature of 260 degrees below zero Fahrenheit. In designing the LM tank, Boulder Division drew upon space technology acquired in producing cryogenic storage systems for NASA's Apollo and Skylab spacecraft and for the Space Shuttle. In addition to the tank, the LM system includes simple "under the hood" carburetor conversion equipment (top right). An optional twin-fuel system enables the vehicle operator to use either LM or gasoline fuel.

Last year, Beech received its first substantial contract for the system from Northwest Natural Gas Company, Portland, Oregon. Boulder Division has started deliveries on an order for 25 vehicle conversions and is furnishing a liquid methane refueling station. Beech is also providing instruction for Northwest Natural Gas personnel. The latter company has its own large natural gas supply and a facility for converting methane to liquefied state.

